

Chapter 7, Cell Structure and Function (continued)

Section 7-3 Cell Boundaries (pages 182-189)

This section describes the main functions of the cell membrane. It also explains what happens during diffusion and explains what osmosis is.

Cell Membrane (page 182)

1. What are the functions of the cell membrane? _____

2. The core of nearly all cell membranes is a double-layered sheet called a(an) _____
_____.
3. What is the difference in the function of the proteins and the carbohydrates attached to a cell membrane? _____

Cell Walls (page 183)

4. In what organisms are cell walls found? _____

5. Is the following sentence true or false? The cell wall lies inside the cell membrane.

6. What is the main function of the cell wall? _____

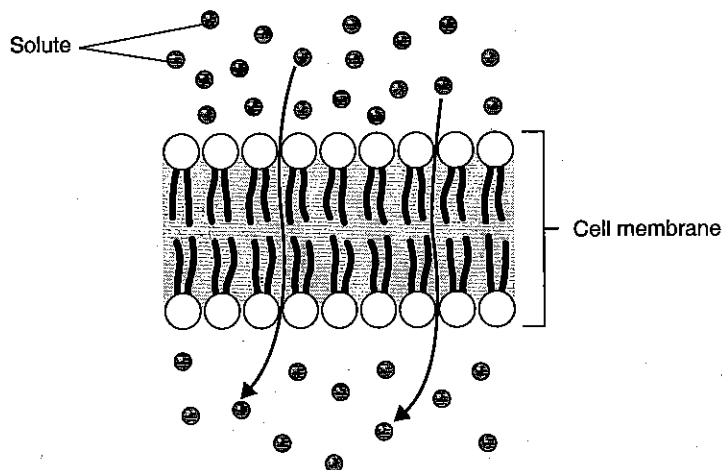
7. What are plant cell walls mostly made of? _____

Diffusion Through Cell Boundaries (pages 183-184)

8. The cytoplasm of a cell is a solution of many different substances in _____
_____.
9. What is the concentration of a solution? _____

10. What is diffusion? _____

11. The molecules of solute in the illustration are moving through the cell membrane from top to bottom. Indicate with labels which side of the membrane has a high concentration of solute and which has a low concentration.



Osmosis (pages 185–186)

12. What does it mean that biological membranes are selectively permeable?

13. What is osmosis? _____

14. Is the following sentence true or false? Water tends to diffuse from a region where it is less concentrated to a region where it is highly concentrated. _____

15. When will water stop moving across a membrane? _____

Match the situation to the description.

| Situation | Description |
|---------------------------------------|--|
| _____ 16. Two solutions are isotonic. | a. The solution is above strength in solute. |
| _____ 17. A solution is hypertonic. | b. The solutions are the same strength. |
| _____ 18. A solution is hypotonic. | c. The solution is below strength in solute. |

19. On which side of a selectively permeable membrane does osmosis exert a pressure?

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Chapter 7, Cell Structure and Function (continued)

Facilitated Diffusion (page 187)

20. What happens during the process of facilitated diffusion? _____

21. What is the role of protein channels in the cell membrane? _____

22. Is the following sentence true or false? Facilitated diffusion does not require the cell to use energy. _____

Active Transport (pages 188–189)

23. The energy-requiring process that moves material across a cell membrane against a concentration difference is called _____.
24. Is the following sentence true or false? Active transport always requires transport proteins during the process. _____
25. Complete the table about types of active transport.

TYPES OF ACTIVE TRANSPORT

| Type | Description |
|--------------|-------------|
| Endocytosis | |
| Phagocytosis | |
| Exocytosis | |

26. During endocytosis, what happens to the pocket in the cell membrane when it breaks loose from the membrane? _____

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